Name:

p1105: Factoring when $a = 1$ (v5)

Example: Factor $x^2 + 5x - 24$

Find two numbers whose product is -24 and whose sum is 5. Focus on finding factor pairs of -24. Eventually you consider 8 and -3 because $(8)(-3) = -24$. You verify this pair is correct because $(8) + (-3) = 5$. Thus, your answer:

$$(x + 8)(x - 3)$$

1. Factor $x^2 - 81$

$$(x + 9)(x - 9)$$

2. Factor $x^2 - 2x - 15$

$$(x + 3)(x - 5)$$

3. Factor $x^2 + 9x + 18$

$$(x + 6)(x + 3)$$

4. Factor $x^2 + 15x + 54$

$$(x + 6)(x + 9)$$

5. Factor $x^2 - 4x - 32$

$$(x - 8)(x + 4)$$

6. Factor $x^2 + 13x + 40$

$$(x + 5)(x + 8)$$

7. Factor $x^2 - 1$

$$(x + 1)(x - 1)$$

8. Factor $x^2 - 2x - 8$

$(x + 2)(x - 4)$

9. Factor $x^2 - 11x + 18$

$(x - 9)(x - 2)$

10. Factor $x^2 - 2x + 1$

$(x - 1)(x - 1)$

11. Factor $x^2 - 2x - 48$

$(x + 6)(x - 8)$

12. Factor $x^2 - 8x - 9$

$(x + 1)(x - 9)$

13. Factor $x^2 - 8x + 15$

$(x - 5)(x - 3)$

14. Factor $x^2 + 12x + 27$

$(x + 9)(x + 3)$

15. Factor $x^2 + 3x - 40$

$(x + 8)(x - 5)$